

- a) forming a complex consisting of a nucleic acid and a polymer in a solution wherein the complex has a net charge less negative than the nucleic acid;
- b) attaching a charged polymer to the complex in sufficient amount to change the complex net charge wherein the complex has a net charge more negative than the complex in the prior step;
- c) inserting the complex into a mammal;
- d) delivering the complex to the cell.

8) (Amended) [A complex for delivering a polyion to a cell, comprising:

- a) a polyion; and,
- b) a charged polymer wherein the polyion and the charged polymer are bound in complex, the complex having a net charge that is the same as the net charge of the charged polymer.]

A complex for delivering a nucleic acid to a cell, comprising:

- a) the nucleic acid;
- b) a polycation polymer complexed with the nucleic acid; and,
- c) a polyanion polymer complexed with the polycation.

10) (Amended) [The complex of claim 9 wherein the polycation is selected from group consisting of PLL and PEI.]

The complex of claim 8 wherein the polycation is selected from group consisting of PLL and PEI.

12) (Amended) [The complex of claim 11 wherein the polyanion comprises a molecule selected from the group consisting of succinylated PLL, succinylated PEI, polyglutamic acid, polyaspartic acid, polyacrylic acid, polymethacrylic acid, dextran sulfate, heparin, hyaluronic acid, DNA, RNA, and negatively charged proteins.]

The complex of claim 8 wherein the polyanion polymer is selected from the group consisting of succinylated PLL, succinylated PEI, polyglutamic acid, polyaspartic acid, polyacrylic acid, polymethacrylic acid, dextran sulfate, heparin, hyaluronic acid, DNA, RNA, and negatively charged proteins

13) (Amended) [The complex of claim 8 wherein the charged polymer comprises a block co-polymer.]

The complex of claim 8 wherein each polymer comprises a block co-polymer.

14) (Amended) [The complex of claim 11 wherein the polyanion comprises a molecule selected from the group consisting of pegylated derivatives, pegylated derivatives carrying specific ligands, block copolymers, graft copolymers and hydrophilic polymers.]

The complex of claim 8 wherein the polyanion comprises a molecule selected from the group consisting of pegylated derivatives, pegylated derivatives carrying specific ligands, block copolymers, graft copolymers and hydrophilic polymers.

DNA if  
no sp  
electro

- 15) (Amended) [A process for delivering a complex to a cell, comprising:
- a) forming the complex having a net charge comprising a nucleic acid and a polymer in a solution;
  - b) attaching a charged polymer to the complex in sufficient amount to change the net charge;
  - c) delivering the complex to the cell, *in vitro*; and,
  - d) expressing the nucleic acid.]

A process for delivering a nucleic acid to a cell, *in vitro*, comprising:

- a) forming a complex comprising a nucleic acid and a polymer in a solution wherein the complex has a net charge less negative than the nucleic acid;
- b) attaching a charged polymer to the complex in sufficient amount to change the complex net charge wherein the complex has a net charge more negative than the complex in the prior step;
- c) delivering the complex to the *in vitro* cell.

- 16) (Amended) [The complex of claim 15 wherein the polycation is selected from group consisting of PLL and PEI.]

The complex of claim 15 wherein the polymer is selected from group consisting of PLL and PEI.

- 17) (Amended) [The complex of claim 16 wherein the negatively charged polyion comprises a molecule selected from the group consisting of succinylated PLL, succinylated PEI, polyglutamic acid, polyaspartic acid, polyacrylic acid, polymethacrylic acid, dextran sulfate, heparin, hyaluronic acid, DNA, RNA, and negatively charged proteins.]

The complex of claim 16 wherein the polymer comprises a molecule selected from the group consisting of succinylated PLL, succinylated PEI, polyglutamic acid, polyaspartic acid, polyacrylic acid, polymethacrylic acid, dextran sulfate, heparin, hyaluronic acid, DNA, RNA, and negatively charged proteins.

- 18) (Amended) [The complex of claim 15 wherein the negatively charged polyion comprises a molecule selected from the group consisting of pegylated derivatives, pegylated derivatives carrying specific ligands, block copolymers, graft copolymers and hydrophilic polymers.]

The complex of claim 15 wherein the polymer comprises a molecule selected from the group consisting of pegylated derivatives, pegylated derivatives carrying specific ligands, block copolymers, graft copolymers and hydrophilic polymers.

A clean version of each replacement claim is submitted below. Please enter each claim.

- 1) A process for delivering a nucleic acid to a cell, comprising:
  - a) forming a complex consisting of a nucleic acid and a polymer in a solution wherein the complex has a net charge less negative than the nucleic acid;
  - b) attaching a charged polymer to the complex in sufficient amount to change the complex net charge wherein the complex has a net charge more negative than the complex in the prior step;
  - c) inserting the complex into a mammal;
  - d) delivering the complex to the cell.
- 2) A complex for delivering a nucleic acid to a cell, comprising:
  - a) the nucleic acid;
  - b) a polycation polymer complexed with the nucleic acid; and,
  - c) a polyanion polymer complexed with the polycation.
- 10) The complex of claim 8 wherein the polycation is selected from group consisting of PLL and PEI.

The complex of claim 8 wherein the polyanion polymer is selected from the group consisting of succinylated PLL, succinylated PEI, polyglutamic acid, polyaspartic acid, polyacrylic acid, polymethacrylic acid, dextran sulfate, heparin, hyaluronic acid, DNA, RNA, and negatively charged proteins
- 13) The complex of claim 8 wherein each polymer comprises a block co-polymer.
- 14) The complex of claim 8 wherein the polyanion comprises a molecule selected from the group consisting of pegylated derivatives, pegylated derivatives carrying specific ligands, block copolymers, graft copolymers and hydrophilic polymers.
- 15) A process for delivering a nucleic acid to a cell, *in vitro*, comprising:
  - a) forming a complex comprising a nucleic acid and a polymer in a solution wherein the complex has a net charge less negative than the nucleic acid;
  - b) attaching a charged polymer to the complex in sufficient amount to change the complex net charge wherein the complex has a net charge more negative than the complex in the prior step;
  - c) delivering the complex to the *in vitro* cell.
- 16) The complex of claim 15 wherein the polymer is selected from group consisting of PLL and PEI.
- 17) The complex of claim 16 wherein the polymer comprises a molecule selected from the group consisting of succinylated PLL, succinylated PEI, polyglutamic acid, polyaspartic